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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,966	07/08/2004	Tsutomu Hiroki	255663US3PCT	3388
22850	7590	10/02/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
FORD, NATHAN K				
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE		DELIVERY MODE		
10/02/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/500,966

Applicant(s)

HIROKI, TSUTOMU

Examiner

NATHAN K. FORD

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 10-13, 17-21, 23, 24 and 37-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 10-13, 17-21, 23, 24 and 37-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/17/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's Arguments

The arguments presented by the applicant during an interview on May 29, 2008, and in a brief filed on June 5, 2008, have been fully considered and are persuasive. Accordingly, the previous rejections have been withdrawn. However, upon further consideration, a new primary reference is introduced.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 10-13, 37, 39-41, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmeister, US 2001/0036398, in view of Ogawa et al., US 6,293,746.

Claim 1: Hofmeister discloses a substrate transport apparatus comprising the following:

- A transfer base (36) (Fig. 2);
- A support (52) for supporting the transfer base;
- First (66) and second (68) support arms disposed on the transfer base;
 - Wherein the two support arms respectively have a first (38) and second (39) support surface to retain substrates (Fig. 2);
 - Wherein the first and second support surfaces are positioned *substantially* on the same plane (Fig. 1A);
- A first (44) and second (46) driving motor for sliding the support arms [0029];
- A third motor (42) for revolving the transfer base [0032];
- A three-axis coaxial structure [0023-24];
 - A intermediate drive shaft (50a);
 - An outer drive shaft (50b);
 - A central drive shaft (50c).

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Regarding the claim element drawn to the projection of the support surfaces to an equivalent side: A recitation concerning the manner in which a claimed apparatus is to be employed does not differentiate the apparatus from prior art satisfying the claimed structural limitations (*Ex parte Masham*, 2 USPQ2d 1647). Hofmeister's apparatus is capable of achieving such functionality as indicated by Figure 2, for instance.

Hofmeister's transfer base support (52) does not comprise an arm that is stretchable and bendable. In supplementation, Ogawa, disclosing a substrate transfer robot, teaches an alternative configuration wherein the transfer base support (1) includes a bendable arm (8) affixed to the transfer base (9), on which is disposed a first (20A) and second (20B) support arm (Fig. 1A). The arrangement improves the robot's range of motion, thereby augmenting the locations to which the robot can deliver and receive wafers. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement Hofmeister's transfer base support with a bendable arm to improve the range of motion of the transfer mechanism. In combination, the bendable arm would be affixed atop the support (52) and to the bottom of the transfer base (36); a post facilitating mutual rotation of the bendable arm and transfer base would connect the two components. Posts (80, 94) for joining two rotary members are already disclosed by Hofmeister [0026].

Claims 10-13: Given the multiple axes of rotation, the support arms have the capability to move arcuately, occupy an identical coordinate space, diverge from each other, or converge toward each other. Further, a recitation concerning the manner in which a claimed apparatus is to be employed does not differentiate the apparatus from prior art satisfying the claimed structural limitations.

Claims 37, 41, 45: Bearings are provided about each shaft (50a-c) to enable independent rotation [0024].

Claims 39-40: The examiner is considering the forearms (76, 106) joined to the end effectors (38, 39) to be guide rails since it is these components which restrict the motion of the device. The guide rails may also comprise arms 66 and 68 which are beneath the forearms and upon which the support surfaces can "slide." Also, the forearms extend linearly, but can be rotated such that they diverge or converge according to the intended use of the apparatus.

Claims 17-21, 23-24, 43-44, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmeister and Ogawa in view of Guo et al, US 6,079,354.

Claims 17-18: As delineated by Figure 1, Hofmeister further discloses a transfer chamber (12), a transfer mechanism (24) disposed within the transfer chamber, and a plurality of load-lock chambers (16). The prior art cited

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thus far is silent regarding the presence multiple processing apparatuses connected in parallel to both the transfer and load-lock chambers. Nevertheless, as Hofmeister's transfer mechanism is capable of operation within a cluster tool of the type claimed by the applicant, it would have been obvious to incorporate the carrying mechanism within a multi-chamber system. Thus, in supplementation, Figure 2 of Guo delineates a transfer mechanism (220) disposed within a common transfer chamber (215); both the processing (225) and load-lock (205, 210) chambers are connected to the transfer chamber in parallel to expedite processing, as is well-known in the art. All chambers operate under vacuum conditions (5, 16-20). This disclosure, then, demonstrates the suitability of disposing a transfer mechanism such as Hofmeister's within the common transfer chamber of a cluster tool. It would have been obvious to one of ordinary skill in the art at the time the invention was made to dispose the transfer mechanism of Hofmeister within the transfer chamber of a cluster tool as taught by Guo to achieve the predictable result of expedited substrate processing.

The rejection of claim 1 addresses those elements drawn to the structure of the transfer mechanism.

Claims 19-21: The rejection of claims 10-13 addresses these claim elements.

Claims 23-24: Hofmeister teaches a controller (11) which dictates the movements of the transfer robot [0021].

Regarding the manner of control: A recitation concerning the manner in which a claimed apparatus is to be employed does not differentiate the apparatus from prior art satisfying the claimed structural limitations.

Claims 43-44: The rejection of claims 38-40 addresses these claim elements.

Claim 46: The rejection of claims 37, 41, and 45 addresses these claim elements.

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmeister and Ogawa in view of Toshima, US 6,007,675. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hofmeister and Ogawa in view of Guo and in further view of Toshima.

Hofmeister's guide rails, as defined under the rejection of claim 39, are not formed arcuately. However, this configuration is well-known in the art, as evidenced by Toshima. This reference discloses a substrate processing system housing a transfer robot (Fig. 4A). In one embodiment, the guide rails (62) of the robot are formed arcuately to facilitate conveyance in accordance with the limitations of the transfer chamber's spatial arrangement. Thus, in light of this teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arcuately reconfigure the shape of Hofmeister's guide rails to facilitate wafer conveyance within a transfer chamber.

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Further, it has been held that the configuration of the claimed element is a matter of choice which a person of ordinary skill would have found obvious (*In re Dailey*, 149 USPQ 47).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan K. Ford whose telephone number is 571-270-1880. The examiner can normally be reached on M-F, 8:30-5:00 EDT. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland, can be reached at 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/N. K. F./

Examiner, Art Unit 1792

/K. M./

Primary Examiner, Art Unit 1792